O-0301
DETERMINE DISTRESS BEACON BEARING

CONDITIONS

You are a member of a ground team searching for an distress beacon that is at least 1/2 a mile away. You have been given the task of operating the detection finding (DF) equipment.

OJECTIVES

Indicate the direction to the distress beacon +/- 10 degrees within 10 minutes.

TRAINING AND EVALUATION

Training Outline

1. The majority of CAP search missions are electronic searches for distress beacons. Correct use of DF equipment is critical to these searches. The first step to locating distress beacon is to determine the general direction to the location of the distress beacon. (NOTE: This section was written using the popular L-tronics LH-16 l-per as the DF unit. Technical procedures should be adapted by units with other equipment).

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2. To determine the bearing to a distress beacon:

a. Assemble the LH-16 on the antenna mast assembly and hold vertically in front of you, such that you can see the receiver controls.

b. Turn the unit on, turn the volume and sensitivity full up, set the MODE knob to DF. Set the FREQUENCY KNOB to the appropriate frequency (121.775 for practice distress beacons, 121.5 and 243 (military distress beacons or harmonic transmitted by basic distress beacons) for actual distress beacons, many military aircraft carry civilian distress beacons; civilian distress beacons by law transmit on both frequencies.). Listen for the distress beacon signal. If you have no signal, move to some other location where you do.

c. Once you have the signal, swing the antenna slowly through a full circle around you and determine where the needle centers. If it centers more than twice, analyze your location to determine if you might be dealing with more than one signal, reflections or interference from power lines, etc. Remember all directions where the needle centers.

d. Switch to the REC mode and determine where the signal strength is greatest (needle deflected farthest to the right, signal direction is off the left antenna mast). The strongest signal direction should be in one of the same directions that the needle centered in the DF mode.

e. Switch back to the DF mode and locate where the needle centers in the direction where the REC mode receives a maximum signal. While one person keeps the unit aligned on the signal, another stands behind him and takes a compass bearing (see task O-0201 - Use a Compass.)

f. As you get closer to the signal, decrease the sensitivity to avoid overloading the receiver.

Additional Information

More detailed information on this topic is available in Chapter 6 of the Ground Team Member & Leader Reference Text.

Evaluation Preparation

Setup: Set up a practice beacon transmitting on 121.775 MHz at least one half mile away from the test site. Take a set of DF equipment, and ensure that one can get a good strong signal to the practice beacon (verify the direction off a map). With a compass, determine the magnetic bearing to the practice beacon. Disassemble the DF equipment and give it to the student.

Brief Student: Tell the student to assemble the DF gear, determine the direction to the practice beacon, and point it out to you. When he points, check the bearing with a compass.

Evaluation

Performance measures	Results	
1. Correctly put the DF equipment into operation.	P	F
2. Uses DF and REC (as applicable) to determine the direction to the practice beacon.	P	F
3. Points out the direction to the practice beacon +/- 10 degrees.	P	F
4. Completes all steps within 10 minutes	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.